solution, soda, argyrol, and ichthyol have all given admirable results. Ichthyol solutions often seem effective when others have failed.

In arranging the diet we have greatly reduced the proteid food, thereby removing much of the material available for the putrefaction. Frequent changes in diet have been tried, with the idea of producing unfavorable conditions for the growth of the putrefactive bacteria. Although buttermilk has been given to many, the writer's experience with it, and the artificial preparations of the lactic acid bacilli has not been such as to cause any reliance to be placed in these preparations *per se.*

No one point has been found to be of more importance in those many cases where overwork is a factor than a restoration of nerve tone, as by a vacation spent under ideal conditions in the mountains. Some of my patients have indicanuria which recurs with some degree of regularity in the spring, disappearing after a thorough bodily and mental rest.

In the majority of my cases cure of the condition has been comparatively easy, but in the occasional true auto-intoxication the progress has been slow and at times discouraging. Although not invariable, it has been our experience that the longer the duration of the indicanuria the greater the length of time it persists under treatment.

ADENOCARCINOMA OF THE THYROID, WITH METASTASIS TO THE CERVICAL GLANDS AND PITUITARY: A CONTRIBUTION TO THE PATHOLOGY OF ABNORMAL FAT FORMATION.

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The underlying pathology of excessive and aberrant fat formation has in recent years been the subject of much investigation. Following the publication, in 1888, of the original article by Dercum on "Adiposis Dolorosa," many cases were placed on record as belonging to this syndrome which in the light of the newer researches into the pathology of fat formation have been segregated into other groups. The general tendency has been to divide the various pathological forms of fat formation into groups according to the clinical picture. The following clinical forms have been described: (1) Dercum's syndrome—adiposis dolorosa, (2) adiposis tuberosa simplex (Anders), (3) symmetrical adenolipomatosis (Launois and Bensaude), (4) adipositas cerebralis (Froelich), (5) adipositas pinealis (Marburg), (6) nodular circumscribed symmetrical multiple lipomatosis, (7) adiposis secondary to true or neuropathic edema.

Cases of adiposis dolorosa are often met with and constitute a fairly definite clinical picture. Painful indurated areas in the fat tissue associated with asthenia, mental symptoms, and psychic manifestations, constitute the four cardinal symptoms. Anders separated from this group a series of cases showing indurated tumor-like masses in the fat tissue without pain or tenderness, and without asthenia or psychic manifestations.

Launois and Bensaude under the title of l'adéno-lipomatose symétrique à prédominance cervicale reported a series of cases of symmetrical fat deposits about the neck and shoulders that deserved special clinical consideration. Many similar cases had already been reported in the literature, beginning with that of Brody in 1846. Madelung, who wrote the first systematic treatise on the subject, considered the condition as a special clinical variety of lipomatosis. Launois and Bensaude, after digesting the literature, came to the conclusion that symmetrical adenolipomatosis, adenolymphocele, segmentary edema of Debove, neuropathic pseudoelephantiasis of Mathieu, and supraclavicular pseudolipoma were not necessarily identical, but belonged, nevertheless, to the same morbid group. The adenolipomatosis cases of Launois and Bensaude were characterized by symmetrically placed diffused fat masses localized to the region of the neck, the axilla, and the trunk, and associated with asthenia, mental irritability, apathy and hypochondria, enlargement of the spleen, acceleration of the pulse, and decrease of small mononuclear cells. These fat masses even when of great size may be associated with general emaciation. Microscopic examinations of incised portions have shown the presence of large and sclerosed lymphatic glands in the fatty tissue. An increase and diminution in the size of the fat during its development has led Launois and Bensaude to consider the disease to have its origin in the lymphatic system.

In the only autopsy on record, Dieulafoy showed no lesion in the nervous system, but found cirrhosis of the liver and spleen and pancreas, tuberculosis of the peritoneum, adenomatous hypertrophy of the thyroid, with an enlarged and congested pituitary body. The fat masses showed no evidence of lymphatic tissue, and the nodules noted were evidently due to an invasion of connective tissue. Lyon includes an autopsy, reported by one of the authors of this paper with Dercum, as belonging to this group. This will be considered later.

Adiposis cerebralis. This condition described by Froelich has a very close analogy to adiposis dolorosa. In its simplest form it consists of an excessive general adiposis developing during the course of a brain tumor, which in most cases has been found at autopsy to involve the pituitary body, but which in one case was found to involve the pineal gland (Marburg). A close association has been found in this group of cases with defective development of the genital organs. E. von Eiselberg has reported marked improvement and apparent cure after the removal of the pituitary body in 2 cases.

Nodular circumscribed symmetrical lipomatosis. Multiple isolated lipomatous tumors have occurred symmetrically placed in different portions of the body. On account of the symmetrical arrangement and on account of the association of the tumors, with tabes, general paralysis, sciatica, etc., it has been assumed that the nervous system and more particularly the trophic centres in the spinal cord were the cause of the affection. There is, however, practically no evidence to support such a theory. As many as 2000 of these lipomatoma have occurred in the same individual (Launois and Bensaude).

Adiposis secondary to true or neuropathic edema is a gradual transition and transformation of tissues which are the seat of chronic edema to at first pseudolipomatous, and later, true lipomatous tissue. Two groups may be identified: (1) Neuropathic edemas which most often give rise to the pseudolipomatous state, and according to Strübing, are closely related if not identical with the edematous swelling of adiposis dolorosa. (2) True edemas sometimes noted on the paralyzed side of hemiplegics with failing cardiac or renal function. If the patient lives sufficiently long they may become transformed into pseudolipomatous tissue, which does not pit on pressure and which has all the characteristics of subcutaneous adipose tissue.

From a clinical standpoint the above groups stand out fairly clear and distinct. It would not be a difficult matter to form new subgroups. When, however, we consider the underlying pathological factors we find for the most part somewhat similar organic changes in practically all of the above groups. In adiposis dolorosa the first group to be studied postmortem, our attention was directed to the region of the ductless glands and the generative system. In both cases upon which one of us performed the autopsy, lesions of the pituitary, the thyroid, and the sexual organs were present. Similar lesions were found by other observers. In 7 of the cases that have come to autopsy, lesions of the thyroid, consisting in atrophy, with compensatory hypertrophy, were noted in all; tumors of the pituitary were noted in 3 cases, with pathological lesions of the gland in 2 other cases. It would therefore appear that disturbance of function of the thyroid and pituitary bodies had much to do, if indeed they were not the causative factors, with the production of this one form of pathological fat. Interference with the sexual function has long been considered an important factor in the production of excessive adipose tissue. Whether this is a direct or indirect relationship has not been fully determined. It would appear from the work of Froelich and others that the relationship is indirect, inasmuch as tumors of the pituitary not only inhibit sexual development, but also lead to excessive fat deposition.

In a case under the observation of one of us (McCarty), a boy when aged fourteen years, weighing less than 100 pounds, during a period of three months gained 80 pounds in weight. This was followed by mental symptoms, slow mental reaction, mental hebetude, and later, from time to time, during the last ten years, of apparent mental and physical exhaustion, with at times, delusions of persecutions. The development of the sexual function was totally inhibited, the testicle remaining the size of a filbert, with absence of hair on the pubes. In this case, in addition to the above symptoms, gigantism developed, with rapid growth, after adolescence.

We have been able to trace connecting links in several of the above groups. Beginning with adiposis dolorosa, with the predominance of thyroidal lesions, a case reported by one of us (McCarthy) in conjunction with Dercum, represents an intermediate type between adiposis dolorosa and the adiposis cerebralis of Froelich. Clinically, the case presented a combination of adiposis dolorosa and a type of adenolipomatosis of Launois and Bensaude. The patient was a man, aged thirty-nine years. Fifteen years previous, at the age of twenty-four years, he grew excessively fat, and later exhibited symmetrical deposits about the neck and trunk which were exquisitely painful to touch. He presented a marked asthenia, and for the last five years of his life suffered from major epilepsy. The testicles were undeveloped both to gross and microscopic examination; the penis was small, and there was a scanty growth, one might almost say absence, of hair on the pubis. At the autopsy a weight of 206 pounds, in a man of 4 feet 10½ inches was recorded. In this case adenocarcinoma of the pituitary body, congenital enlargement of the adrenal, telangiectatic angioma of the spleen, and acute parenchymatous nephritis were found. Extensive lymphoid infiltration was present in the subcutaneous fat, and scattered here and there numbers of hemolymph glands. In the clinical picture the presence of lymphoid material in the fat tissue in this case presents a good example of adenolipomatosis. Inasmuch, however, as the fat tissue itself exhibited both in its development and in its morphology the presence of pain and tenderness, and since asthenia and mental symptoms, all the characteristics of adiposis dolorosa existed, the case belongs in this sense to Dercum's syndrome. The rapid development of the fat after an acute infection, together with failure of development of the sexual organs, in the presence of epilepsy, with a tumor of the pituitary body, brings the case within the group of adiposis cerebralis.

In the following case a clinical diagnosis of adenolipomatosis was made. The scarcity of autopsies in this group makes the detailed study of this case of much interest from a pathological standpoint. Metatasis of a thyroidal tumor to other portions of the body, including the pituitary, makes the case well worth recording.

The history and notes of examinations are as follows:

M. McD., white, aged fifty-seven years, born in Ireland, was admitted to the nervous wards, Philadelphia General Hospital, September 2, 1906. Careful investigation of family history reveals nothing of importance as bearing on his present condition.

His previous medical history reveals intermittent fever when aged twenty-two years. Since that time he has been in good health until the present illness. He denies ever having had syphilis or other forms of venereal disease. Alcohol was used in excess for many years.

Present Illness. Present trouble began in 1903. He gave up work on account of feeling of confusion in head, with some dizziness. On attempting to get out of bed the following morning he fell to the floor. He then found that his right arm and leg were completely paralyzed. He remained in bed for a period of two months, when there was sufficient return of power in the leg to enable him to move about. Since that time there has been a progressive improvement in both the arm and the leg until at the present time he is able to use both fairly freely, with, however, marked spasticity in the right leg. On admission to the hospital there was a marked enlargement of the neck. The patient is not at all certain about the beginning of this trouble, and states that it was of slow onset and had existed for some time before the stroke. He attributed it to a gradual increase of fat, and paid little attention to it.

Physical examination shows a man above normal weight, with a marked enlargement of both sides of the neck, symmetrical in distribution, which gives to the face a bloated and frog-like appearance. This enlargement appears to be due to masses of fat tissue, freely movable, and of somewhat harder consistence than fat present in this location. There is a right inguinal hernia. The lungs show no abnormal condition. The apex of the heart is in normal position; both the pulmonary and aortic second sounds are accentuated; the heart action is somewhat irregular. The nervous examination shows the station to be fair and the gait to be hemiplegic, with marked spasticity in the right leg. The left arm is normal; the right arm is spastic, with some loss of power, the grip in the right hand being diminished. Resistance to motor tests in both arms shows a fair amount of power. The legs are fairly well developed; the right leg is somewhat rigid, and shows a marked increase of the knee jerk, ankle clonus, and a positive Babinski reflex. On the left side the reflexes are normal.

There is no Babinski reflex on the left side. The Gordon paradoxic reflex is absent on both sides. The cremasteric reflex is present on both sides. Sensation is normal over the entire body. Examination of the cranial nerves shows the pupils to be equal, with prompt reaction to light, accommodation, and convergence; extraocular movements are good in all directions. The right cheek is flattened. The mouth can be drawn to the right much better than to the left. Tongue is protruded in the median line without tremor. Whistling, mastication, and swallowing are performed promptly and without difficulty.

An examination nine months later, July 1, 1907, gave the following results: Measurement of the neck at the level of the thyroid cartilage is 20 inches. There is a marked distention of the veins of the neck and the upper portion of the thorax above the third rib. The veins are about the size of a goose-quill. The head is pushed forward and the neck has the appearance of downward displacement, as the second rib may be easily mistaken for the clavicle. The enlargement of the neck is bilateral and symmetrical, and is composed of isolated freely movable tumors varying in size from a chestnut to that of a small apple. These tumor masses are now firm and not tender nor painful. The physical examination of the chest shows that the expansion is practically *nil.* There is dulness to percussion anteriorly an inch to either side of the sternum above the third rib. On the left side this fuses with cardiac dulness. Posteriorly there is dulness over the upper lobes of the lungs to the midscapular region. Breath sounds are absent over the areas of dulness anteriorly. Distant vesicular breath sounds are heard over the upper lobes posteriorly. Tactile and vocal fremitus are both increased over the upper lobes posteriorly. Vocal fremitus is absent over the anterior area of dulness.

One year later (July 30, 1908), a reëxamination showed the condition to remain practically the same as that above noted on the preceding examination. The following observations, however, were recorded: There is some difficulty in swallowing; the speech is muffled and husky to such a degree that it is impossible for the most part to understand what he says. There is no dyspnea or pain. There is some limitation of movement of the head, which is more marked to the right. Dupuytren's contractures have developed in both little fingers. The blood count shows: Red blood cells, 320,000; leukocytes, 7290; hemoglobin, 75 per cent. (Fleischel). The *x*-ray examination at this time shows the heart displaced toward the right. The lungs at the apex are not diseased, but have lost their transparency to the rays, as is often seen in youth (Kassabian).

On September 4, 1908, there was a marked increase of dyspnea and the patient was removed to the infirmary. Physical examination at this time showed a marked weakness of cardiac action. There was marked loss of muscular element at the first sound, with marked irregularity of the heart action. There were periods of tachycardia followed by periods of bradycardia. No relationship to the respiratory rhythm could be worked out. A few days later (September 10, 1908), the heart action became much weaker, with persistent tachycardia. Percussion over the anterior portion of the chest showed hyperresonance to the clavicles. Gurgling rales were heard over the larger bronchi. The patient died the following day (September 11, 1908).

The clinical diagnosis was recorded as adenolipomatosis; general arteriosclerosis; mitral regurgitation; chronic interstitial nephritis; right inguinal hernia; terminal edema of the lungs.

The Pathological Diagnosis. Malignant adenoma of thyroid, with metastasis of cervical glands; congestion and edema of lungs; cloudy swelling of myocardium, with chronic mitral valvulitis; chronic adhesive peritonitis in gall-bladder region; chronic congestion of stomach and pancreas; chronic fibrous splenitis and perisplenitis; chronic interstitial nephritis; arteriosclerosis and edema of the cerebral meninges.

The autopsy record is as follows: Body of an adult white male, about 5 feet 6 inches tall, showing a moderate fat development, particularly about the upper parts of the trunk. Muscular development fair; pupils equal, teeth poorly preserved. Neck shows the presence of a swelling which seems to be due largely to the presence of a thyroid tumor with enlarged lymph nodes of the anterior chain. Postmortem rigidity marked, lividity moderate; green discoloration of abdomen. Preliminary incision shows a moderate panniculus adiposus and pallid musculature.

Thyroid body shows marked enlargement of all three lobes particularly well marked in the lateral lobes and less so in the middle lobe. The mass is not adherent to the surrounding tissues and is easily dissected loose. The surface is coarsely nodular, and of a glistening mottled gray and green color. The consistence varies from a soft fluctuating sensation over what are apparently pea- to marble-sized cysts, to a dense firm sensation over those parts of the tumor which are the supporting fibrous elements. The cystic portions are of a green color in many places and in other places show the brown glue color so typical of colloid. The mass cuts with considerable difficulty and shows a cystic mottled cut surface from which flows a reddish-green, somewhat cloudy fluid, apparently the result of cutting through the numerous cysts containing material of the same nature. Less numerous cysts show the presence of a dark-brown homogeneous material of gelatinous consistence. The cut surface shows many heavy bands and finer fibrillæ of fibrous tissue.

Cervical lymph nodes on both sides are much enlarged; show no gross evidence of the presence of lymphoid tissue, and are apparently completely occupied by a mass similar to that found in the thyroid body whose presence has increased the size of the individual nodes so that they measure approximately 15 x 5 or 6 mm. These are slightly adherent one to the other, but not to the surrounding tissues of the neck.

Thorax: Right pleura is smooth and glistening. No fluid in cavity.

Right lung weighs 690 grams; as it lies *in situ* it extends well over the midline and overlapping its fellow from the position of the manubrium to the level of the fifth rib; above can be seen the middle lobe of the thyroid projecting below the level of the clavicular ends; below can be seen a small triangular area of pericardium. The lung itself is voluminous, generally dark red, and shows a smooth glistening surface, cuts easily and shows a dark-red mottled cut surface from which a small amount of blood can be expressed from the upper lobe, admixed with a frothy fluid; it crepitates throughout. Bronchi are deeply injected and show slight thickening of the mucosa and adherence of a small amount of thin bloody mucus. Pulmonary artery shows a few streaks of sclerosis. The vein is normal. Peribronchial glands normal in size and deeply pigmented. The lower lobe of the lung posteriorly shows several small areas of deep color with poorly defined edges (probably hemorrhagic) and two larger areas of marked softening with a foul odor and irregular edges.

Left pleura shows dense old adhesions about the lower lobe posteriorly to the diaphragm.

Left lung weighs 1120 grams; voluminous and generally dark red in color. Pleura shows marked adhesions; over the lower lobe several punctate hemorrhages; the lobes are densely adherent. Organ cuts with ease and shows a dark-red, moist, and mottled surface from which can be expressed a large amount of frothy and salmon-colored fluid. Organ crepitates throughout. There is a small area 3 cm. in the upper lobe posteriorly where an area of consolidation is noted; this on cross-section shows a lighter color than the surrounding parts and is finely granular in appearance and shows absence of retraction in contrast to the surrounding tissue. Pulmonary vessels, bronchi, and peribronchial glands are as in the other lung.

Pericardium smooth and glistening except for an area posteriorly on the upper surface of the left ventricle where the parietal and visceral pericardium are densely adherent.

Heart is about the size of the patient's clenched fist; soft and flaccid, shows a smooth and glistening pericardium except as mentioned above. Subepicardial fat moderate in amount; muscle cuts with ease; cut surface is grayish brown in color, distinctly friable and slightly bleeding; left ventricular wall is 13 mm., left auriculoventricular orifice 11 cm., leaflets diffusely thickened, show some nodular fibrosis about the valve margins; chordæ tendineæ show considerable adhesions and papillary apices a moderate fibrosis. Aortic orifice, 8 cm.; valve leaflets are diffusely thickened, and sinuses of Valsalva show well-marked sclerosis not involving the coronary orifices. Right ventricular wall measures, 2 mm. in thickness; right auriculoventricular orifice, 12.5 cm.; pulmonic, 7 cm.; leaflets in both normal. Ventricular cavities somewhat enlarged and show distinct flattening of columnæ carneæ. Auricular cavities normal. Coronary arteries slightly sclerosed.

Aorta: There is extensive plaque formation in aorta and thickening of intima.

Tongue basis, larynx, trachea, and esophagus normal.

Abdomen: Peritoneum smooth and glistening except the region of the gall-bladder, where there is well-marked adhesion of the liver, gall-bladder, duodenum, and colon. The ascending colon is adherent and markedly convoluted in such a fashion that the cecum lies in the right hypochondriac region with its tip about 5 cm. below the costal margin. Appendix points down and in, slightly adherent.

Spleen weighs 120 grams; shows chronic fibrous splenitis and perisplenitis.

Adrenals. Normal.

Kidneys show chronic interstitial nephritis. Bladder and ureters, normal.

Liver weighs 1460 grams; measures, 25 x 18 x 7 cm.; firm; normal shape except for a small anteroposterior fissure on upper surface. On anterior margin there is an irregular circular area 1.5 cm. in diameter, yellow colored, with a depressed centre which on cross-section is firm, resistant, and grayish yellow, hyalin in appearance, with a deeper gray depressed centre. This area is sharply defined from the surrounding tissue and apparently replaces the liver parenchyma. Organ cuts easily and shows a bulging, profusely bleeding, generally reddish-brown surface. Closer examination shows depressed red brown central areas fusing, and surrounded by a lighter, grayish-brown peripheral area.

Gall-bladder is densely adherent to surrounding parts; no marked thickening of wall; filled with cloudy, slightly thickened, viscid bile. Mucosa normal, ducts patulous.

Pancreas shows chronic congestion.

Stomach shows slight chronic hypertrophic gastritis.

Small intestine shows slight congestion and submucous hemorrhagic points, especially in the ileum.

Large intestine approximately normal. Appendix is 10 cm. in length, patulous, and except for slight adhesion is normal.

Histological examination was made of the organs indicated in the following report:

Thyroid gland (tumor): Eight sections show an irregular mass of supporting fibrous tissue, which in places is thick and shows definite hyalinization. A lymphocytic infiltration of variable degree is noted in nearly all the sections. Vascularization is moderately rich. The epithelium for the most part is arranged in variously sized cysts, in some sections singly, occupying almost the entire area, and in others forming minute acini whose lining wall is made up of a single layer of a dozen cuboidal cells and present in almost every conceivable grade between the extremes. These cystic areas contain an eosinophilic, structureless, and homogeneous mass with edges showing some "scalloping" toward the epithelium, evidently from this and the gross appearance being colloid. The walls of the cysts show in places distinct outgrowths into the lumina of papillæ covered with the single layer of cuboidal epithelium and having a form varying from a simple finger-like projection to villi whose subdivisions and tree-like branchings are innumerable. The supporting connective tissue of these villi is slightly vascularized and loosely arranged, the cells showing moderately large vesicular nuclei. Definite penetration of the basement membrane is to be seen in only a few instances, but small collections of epithelial cells without definite arrangement and without any evidence of basement membrane are numerous and usually lie in fairly close relation to an acinus. Throughout the tumor, lying in colloid masses, in the heart of epithelial masses, in the supporting substance of the papillæ, and well out in the larger masses of hyalinized connective tissue, are moderately numerous somewhat broken, generally rounded masses of an intensely basophilic homogeneous material which has the histological appearance of a calcareous deposit. Although this is partly deposited as an irregular mass, yet there are considerable numbers of small bodies intermingled whose lamination, globular shape, and somewhat less basophilia give the typical appearance of psammoma bodies. Diagnosis: Papilliferous-cyst-adeno-psammo-carcinoma of thyroid.

Cervical Lymph Node. The section shows a definitely thickened capsule, underlying which are a few lymphoid cells lying between fibrillæ of dense connective tissue. The body of the node, however, shows a mass practically identical with the primary tumor, and showing both colloid and psammoma body formation; evidently a metastasis from the primary tumor in the thyroid.

Lung: Three sections examined. The first two sections are much alike and show extending throughout almost all the section marked thinning of the alveolar walls, with rupture so as to bring about the fusion of several smaller alveoli, with the production of a larger one. Even these thinned walls show capillaries crowded with erythrocytes and an occasional leukocyte. This congestion extends throughout the section and shows itself markedly in the larger vessels of both venous and arterial type. While the emphysema is universal, many of the alveoli are filled with an exudate consisting in many places of a dense network of fibrin enmeshing great numbers of erythrocytes, a few desquamated epithelial cells and some coal-carrying phagocytes. A moderate amount of nuclear fragmentation is present in all the alveoli. The bloodvessels and bronchi show no notable changes, except that there is well-marked dilatation of the perivascular lymph spaces about some of the larger bloodvessels. The third section of lung shows a large amount of pneumonic exudate of the same type, there being added to it a loss of outline of the alveolar walls and a fusion of the erythrocytes in the capillaries without any demonstrable nuclear fragmentation in these parts. There is also a marked edema in association with the pneumonia in this section, showing a clear structureless material taking a slightly acid stain. Occupying a position well within the consolidated mass is a generally circular, non-encapsulated mass of cuboidal epithelial cells arranged in the form of small acini from the walls of which project compound villous fibrous tissue columns supporting a single layer of the same cuboidal epithelium. On three sides small finger-like masses of epithelium not definitely papillary, push out into the lung tissue. In two places within the tumor definite psammoma bodies are seen. Several are seen lying without the well-defined zone of tumor. Diagnosis: Passive congestion and fibrinous bronchopneumonia, with metastasis of primary tumor in thyroid.

Liver: Two sections examined. The first section shows a normally thick capsule. The capsule of Glisson, however, shows a moderate fibrosis, the elements being chiefly old connective tissue with the admixture of a few lymphocytes. The parenchymatous cells show blurring of the cell outlines and slight granularity of the protoplasm. The central vein is packed with blood corpuscles, the congestion extending out into the capillaries almost to the Glissonian capsule and producing centrally considerable capillary dilatation. No definite fibrosis about the central vein. The second section of liver shows a large area made up partly of necrotic masses infiltrated with fibrous tissue poor in nuclei, these latter, however, being distinctly vesicular in type. About the central small irregular necrotic areas are grouped a few epithelioid cells followed by a somewhat thicker layer of small round cells. Throughout these layers a rich fibrous network runs. Vascularization is particularly rich penetrating well into the zone of epithelioid cells. The walls of these vessels are of about normal thickness, but examination of the arterial walls in the capsule of Glisson of neighboring parts shows distinct although moderate thickening apparently of the middle coat of the arterial walls. A section of this part of the liver was stained for tubercle bacilli after the malachite-green method of Rosenberger, with a negative result. Diagnosis: Slight perilobular fibrosis, cloudy swelling, passive congestion, and gumma of liver.

Pancreas: Chronic interstitial pancreatitis.

Spleen: Chronic interstitial splenitis, with passive congestion.

Kidney: Chronic interstitial nephritis, with arteriosclerosis.

Adrenal: Capsule considerably thickened and the vessels overlying the capsule show marked thickening of the intima. The interstitial tissue lying between the cell groups shows moderate overgrowth. A few of the circular cell groups immediately underlying the capsule show well-stained cells which, however, are apparently fused together, distinctly granular, and show more or less nuclear obscuration. The cells of the cortical chains show well-stained, sharply outlined nuclei, but the protoplasm of these cells shows markedly the presence of numerous small vacuoles. In some situations the vacuolization of the cells is not so marked, and the protoplasm shows a distinct eosinophilia. Still other cells lying somewhat centrally show the presence of fine brown granules which occupy almost the entire protoplasm and in many cases markedly obscure the nuclei. The medulla has apparently dropped out of the section so that it cannot be described. Diagnosis: Postmortem digestion of adrenal.

The pathological examination of the nervous system showed the following:

Gross examination: The pituitary body grossly is of normal size. Its posterior half is completely changed to a multiple cystic state, with trabeculæ between the cysts, and containing a colloid material, identical in color, consistence, and transparency with that of the thyroid and surrounding growths.

In the upper third of the pons there is an old thrombotic cyst, 2 mm. in diameter, just to the left of the median line, and immediately ventral to the median lemniscus. There is an extensive area of cortical softening, 4 x 2½ cm., which is scooped out to the extent of 1 cm., and affects the under surface of the occipital lobe at its extreme posterior portion. Sclerosed vessels are seen in the meninges which cover this area, intact. The cortical vessels show marked arteriosclerosis. There is no atrophy; marked passive congestion and moderate edema are present over the frontal lobe. At the base of the brain the vessels show a very extensive grade of arteriosclerosis and marked tortuosity of the vessels. Both vertebral arteries make almost a complete semicircle spreading from the medulla far out toward the cerebellum. On the left side this has produced a marked kinking of the posterior cerebellar artery. The misplaced portion of the left vertebral artery has caught the tenth nerve in such a way as to fold it. It must have influenced its function by pressure. The third nerve appears to be larger on the left side than on the right, where it is also large. The infundibulum seems to be larger than it ought to be.

The pineal gland appears to be normal. The ventricles are normal. There are multiple areas of thrombotic softening scattered through the optic thalamus, the caudate nucleus and the lenticular nucleus. One of the areas is about 4 mm. in diameter and is directly in the internal capsule of the right side. The choroids appear to be normal. There is a slight amount of gelatinous material in the posterior horns. The cerebellum appears to be normal. The spinal cord shows a few small calcified plaques over the second lumbar segment.

Microscopic Examination. The spinal cord apart from a few cells, showing chromatolysis, shows a normal condition. A section of the cortex shows marked pigmentation of the cells of the paracentral globule and the pyramidal cells of the motor cortex. The pigment is of the yellow granular variety, somewhat similar to that seen in senile and presenile changes. The other cells of the cortex do not show this change. The basal ganglia, pons, and medulla are normal.

Pituitary Body: The microscopic examination of the pituitary body shows the general picture of adenocarcinoma. The cells are columnar in type and arranged in long acini. They have broken through the basement membrane and appear in nests of cubical and irregular type of cells. At the periphery of one of the acini, there is an accumulation of the small, irregular, neuroglia type of cell, similar to that seen in the posterior part of the gland. The acini are filled for the most part with a gelatinous material, reddish brown in color, composed of some red blood cells, hyaline material, and large plasmoid cells containing bright yellow pigment. The structure of this portion of the tumor is almost identical with that seen in the primary and secondary thyroid tumors. In the posterior portion of the pituitary body the blood sinuses are markedly distended. There are foci where the small round nuclei are so markedly distended as to give under the microscope somewhat the appearance of splenic pulp. In a reticular fat tissue surrounding the posterior portion of the pituitary body, there is an accumulation of the same type of nuclei, presenting the appearance of lymphoid infiltration, very similar to that described under hemolymph infiltration of the fat tissue in the case of adiposis dolorosa with tumor of the pituitary body.

In the reticular structure of the anterior portion of the gland, irregular concentric bodies of calcification resembling those seen in the choroid plexus, are seen.

Sections of the pneumogastric nerve show no changes.

While the diagnosis of symmetrical adenolipomatosis according to the description of Launois and Bensaude was not borne out by the autopsy, a new pathological form of fat formation was developed associated with multiple adenoma and adenocarcinoma. This term is to a certain extent a misnomer, the condition in the strict sense of the term being more of a lympholipoma than an adenolipomatosis.

The value of this case, however, is not so much in the support of a clinical syndrome of adenolipomatosis, but rather in the bearing which diseases of the pituitary and thyroid bear to the pathological fat syndrome. A compensatory reaction has been claimed and to a certain extent demonstrated between the functions of the pituitary and thyroid. No case, as far as we have been able to determine, has been placed upon record in which a simultaneous development of the same pathological process in these two organs has been found. It is impossible to determine from the lesions of these two organs as to which was primary. It may be assumed that on account of extensive involvement of the thyroid and the metastasis to the surrounding tissues, that this was the primary lesion and that the lesion to the pituitary was secondary. This could hardly be considered in the nature of a true metastasis, and would appear to us to be the result of a compensatory overaction on the part of the anterior portion of the pituitary followed by a degenerative process predetermined in its nature by an already existing similar condition in the thyroid and surrounding tissue. The relationship of diseases of the pituitary, and the thyroid to pathological fat formation has already been mentioned. This case links together three of the groups of pathological fat: The adiposis cerebralis, adiposis symmetrical lipomatosis, and adiposis dolorosa.

The adrenals in this case were normal both to gross and microscopic examination. In some cases of pituitary lesion the adrenals have been found diseased. In a case of adiposis dolorosa with adenocarcinoma of the pituitary, seen by one of us (McCarthy), marked hypertrophy of the adrenal was present.

The relation of the chromaffin system to the function of the thyroid has already received considerable mention in the literature. Not only in this case but in a series of control cases of pituitaries from other cases; chromaffin cells could be easily demonstrated in the posterior portion of the pituitary gland (McCarthy). These cells have nothing to do with the chromophil cells of the anterior portion of the pituitary. The chromaffin cells in the posterior portion of the pituitary follow the same staining reaction as this type of cell elsewhere in the chromaffin system, and more particularly in the adrenal and semilunar ganglia. The cells show their affinity for the chrome salts in a positive manner and the chromaffin granules are best seen in unstained sections after hardening with the chrome solution. The chromaffin cells in this case did not show any variation either as to size or structure or number from those in the control cases.